



CERTIFICATION PROGRAM FOR SUPPLIERS OF ASPHALT

A. SCOPE

This *Certification Program for Suppliers of Asphalt* specifies requirements and procedures for a certification program that will help ensure that quality asphalt is produced for California Department of Transportation (Caltrans) projects. These requirements and procedures shall apply to asphalt: manufactured or modified at refineries, mixed or modified at terminals, in-line blended, mixed or modified at hot-mix asphalt plants, and asphalt stored in an intermediate storage facility prior to shipment to a Caltrans project.

June 1, 2004, this *Certification Program for Suppliers of Asphalt* will be applicable to all suppliers who ship asphalt for incorporation in Caltrans projects using a certificate of compliance.

B. SIGNIFICANCE AND USE

This *Certification Program for Suppliers of Asphalt* specifies procedures for a system-based program that incorporates review and statistical evaluation of a supplier's product and testing program, historical data analysis, and quality assurance testing of asphalt samples taken at projects.

This standard provides information on the following activities:

- General requirements that the supplier shall satisfy to obtain and maintain approved supplier status as a certified supplier of modified and unmodified asphalts and as a certified supplier of individual asphalt grades;
- Minimum requirements that shall be included in a supplier's quality control plan;

- General requirements that the Department will satisfy to evaluate and certify asphalt suppliers; and
- Requirements for delivery of asphalt provided by suppliers not on the Caltrans Approved Supplier List.

C. REFERENCED DOCUMENTS

Caltrans Standard Specifications Section 92, "Asphalts" for AR-Grade Asphalts

Caltrans Standard Special Provisions (SSP)

- SSP S8-M20, "Asphalts" for Performance Based Asphalt (PBA)
- SSP 39-700, "Bonded Wearing Courses" for GGB graded asphalt
- SSP 39-403 and 405, "Asphalt Concrete (Type D-MB)" and "Asphalt Concrete (Type G-MB)" for modified asphalts
- SSPs for asphalt for special projects

AASHTO R-18 – "Establishing and Implementing a Quality System for Construction Materials Testing Laboratories"

AASHTO R-26 – "Certifying Suppliers of Performance-Graded Asphalts"

AASHTO T-40 – "Sampling Bituminous Materials"

ASTM C 670-03 – "Standard Practice for Preparing Precision and Bias Statement for Test Method for Construction Materials"

ASTM D 3244-97 – "Standard Practice for Utilization of Test Data to Determine Conformance with Specifications"

ASTM D 3665 – "Practice for Random Sampling of Construction Materials"

D. TERMINOLOGY

1. *Asphalt* – Products of refined crude petroleum. Asphalt may contain modifiers based on the requirements for the grade. This will include modified (RMB, GGB, and PBA-6a, PBA-6b, and PBA-7) and unmodified (AR, PBA-1, and PBA-4) asphalt. Approval of asphalt for specialty asphalts shall be on a case-by-case basis.

Asphalt shall conform to the requirements of the type and grade produced. Specifications for the requirements are as follows:

Caltrans Standard Specifications Section 92, “Asphalts” for AR-Grade Asphalts

Caltrans Standard Special Provisions (SSP):

- SSP S8-M20, “Asphalts” for Performance Based Asphalt (PBA)
- SSP 39-700, “Bonded Wearing Courses” for GGB graded asphalt
- SSP 39-403 and 405, “Asphalt Concrete (Type D-MB)” and “Asphalt Concrete (Type G-MB) for modified asphalts
- SSPs for asphalt for special projects

SSP's are posted and maintained on the Department's internet website at.
www.dot.ca.gov/hq/esc/oe/specs_html/

- For purposes of this *Certification Program for Suppliers of Asphalt*, addition of anti-stripping agents in accordance with relevant special provisions shall not be considered to be blending or modification to the asphalt.
- For purposes of this *Certification Program for Suppliers of Asphalt*, addition of crumb rubber modifier (CRM) and high natural rubber for the production of asphalt rubber binder at the hot mix asphalt (HMA) production facility in accordance with relevant special provisions shall not be considered to be blending or modification to the asphalt.

- For purposes of this *Certification Program for Suppliers of Asphalt*, suppliers of tack coat and pavement reinforcing fabrics (PRF) asphalt shall conform to the requirements of Section 92, “Asphalts” and Section 94, “Aphaltic Emulsions,” of the Standard Specifications.

2. *Caltrans Approved Supplier Certification* – Certification issued by Caltrans to qualified asphalt suppliers which allows them to supply asphalt to Caltrans projects using a certificate of compliance. Suppliers shall be certified based on meeting the provisions of this *Certification Program for Suppliers of Asphalt*. A listing of approved suppliers is posted and maintained on the Department's internet website at.

www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

Certification is a two-part process:

- A supplier will be certified as a supplier of modified and/or unmodified asphalt based on meeting the conditions of this program for a quality control plan, laboratory participation in AMRL Sample Proficiency Testing, AASHTO laboratory accreditation, testing frequency and verification testing.
- A supplier will be certified as a supplier of a grade of asphalt based on meeting the requirements of the product specifications and this program.

Revocation of a supplier's certification as an approved supplier will prevent the supplier from shipping asphalt to Caltrans projects using a certificate of compliance. Revocation may either be for delivery of any modified or unmodified asphalt or a single grade as determined by the Department and as outlined by this program.

Asphalt may be accepted from a supplier not on the approved supplier list as outlined by this *Certification Program for Suppliers of Asphalt*.

3. *Certificate of Compliance* – A certified statement from the supplier in compliance

with Section 6-1.07, "Certificates of Compliance," of the Standard Specifications and this *Certification Program for Suppliers of Asphalt*. In the certification of compliance the supplier is testifying to the quality of the asphalt and to successful fulfillment of the provisions and requirements of this program.

4. *Department* – California Department of Transportation (Caltrans). The Division of Engineering Services, Materials Engineering and Testing Services (METS), Office of Flexible Pavement Materials will manage this *Certification Program for Suppliers of Asphalt*.
5. *Laboratory* – A laboratory is a facility that provides testing. Laboratories shall be:
 - a. Primary Laboratory – Supplier's main testing facility. This laboratory will coordinate the supplier's initial, quality control and specification compliance testing.
 - b. Satellite Laboratory – Testing facility typically located at a remote location from the supplier's primary laboratory facility.
 - c. Back-up Laboratory – Testing facility designated for fulfilling testing requirements should the primary or satellite laboratory be unable.
 - d. Dispute Resolution Laboratory – Testing facility chosen by the supplier and the Department to serve in the dispute resolution capacity should the need arise if the Department and supplier cannot resolve their differences.
6. *Quality Assurance* – It is the Department's responsibility to assure the Engineer of the quality of the asphalt being delivered to the site and incorporated into the project by conducting sampling and testing.

This *Certification Program for Suppliers of Asphalt* is an essential part of the Department's quality assurance efforts for individual projects. In this program, there is a direct relationship between the suppliers of asphalt and the Department that is supported

by the quality assurance sampling and testing of asphalt at project locations.

7. *Quality Control* – An essential part of this *Certification Program for Suppliers of Asphalt*. It is the supplier's responsibility to ensure product quality through proper implementation and maintenance of a quality control (QC) plan. The QC Plan will be approved by the Department.
8. *Supplier* – A supplier is a refinery, terminal, in-line blender or HMA producer where final production or modification of the asphalt takes place.
 - a. In the case where a company may own more than one refinery, terminal, etc. or various combinations; each individual refinery, terminal, in-line blender or HMA production facility will be considered a "supplier."
 - b. If no modification is made to the asphalt after its production at the refinery and the asphalt is shipped directly from the refinery for use in Caltrans work, the refinery will be the supplier and provide the certification.
 - c. If an asphalt is shipped from a refinery and held, blended or modified at a terminal, the terminal will be the supplier and must provide certification.
 - d. If any modification or blending of asphalt is made at an in-line blending facility, the in-line blender will be the supplier and must provide the certification.
 - e. If any modification or blending of asphalt from different sources is made at the HMA plant, the HMA producer will be the supplier and must provide the certification.
 - f. If asphalt is shipped from a supplier and unloaded into any intermediate storage facility then subsequently shipped for use in Caltrans work, the intermediate storage facility will be the supplier and must provide the certification.

9. *Testing* – Testing will be performed by the supplier and the Department. Testing fulfills the following purposes:

- a. Initial Testing – Testing performed by the supplier and submitted to the Department as part of the requirements to be qualified as an approved asphalt supplier. The supplier shall perform initial testing. The Department may verify initial test results.
- b. Quality Control Testing – Quality control testing shall be described in the supplier's quality control plan. Quality control tests and frequency shall be determined by the supplier and approved by the Department. Quality control testing shall be performed by the supplier. Quality control test results will be made available to Caltrans upon request.
- c. Specification Compliance Testing – Complete testing in accordance with Standard Specifications and/or Special Provision requirements for the applicable asphalt. Specification compliance testing shall be performed by the supplier.
- d. Verification Testing – Testing which is carried out on split samples taken by the supplier for specification compliance testing or by the Department for problem resolution testing. Verification test results shall be compared to the supplier's test results to ensure both asphalt quality and testing reproducibility. Verification testing will be performed by the Department.
- e. Quality Assurance Testing – Testing performed to ensure that asphalt delivered to Caltrans projects meets specifications. Quality assurance testing may be performed by the Department on asphalt samples obtained at HMA plants producing for Caltrans projects.

Quality assurance testing of project related asphalt samples will be used in conjunction with specification compliance and verification testing to evaluate a supplier's performance for continued certification.

- f. Dispute-Resolution Testing – Testing which is carried out by an approved independent third party laboratory to assist in resolving disputes that can not be resolved by the supplier's and the Department's joint efforts. If the dispute is over results from quality assurance testing, the project contractor, the HMA producer, the supplier and the Department will work together with the dispute resolution laboratory.

A request for dispute resolution testing can be initiated by a request from the supplier, the contractor, the resident engineer or METS. Dispute resolution testing will be conducted on retained samples or samples that are taken in the presence of a representative of the Department unless otherwise approved by the Engineer or METS.

E. HAZARDS

The safety requirements of the field and/or laboratory organization and/or OSHA shall be observed.

F. LABORATORY REQUIREMENTS

Laboratories shall be AASHTO accredited by December 31, 2005. Prior to December 31, 2005, laboratories shall present proof that they are in the process of obtaining AASHTO accreditation, are participating in AMRL Sample Proficiency Testing and are complying with all other requirements of this *Certification Program for Suppliers of Asphalt*.

1. Every laboratory providing data for initial, specification compliance or dispute resolution testing shall participate in the AMRL Sample Proficiency Testing program and shall comply with all requirements of this *Certification Program for Suppliers of Asphalt*. Results of

the proficiency testing and corrective actions taken for low ratings shall be included in the Supplier's QC Plan and, after initial submittal of the QC Plan, shall be made available to Caltrans on request.

2. Laboratories shall satisfy the following requirements:

- a. *Primary Laboratory* – The supplier shall designate the laboratory that will coordinate the quality control and specification compliance testing. This laboratory shall be AASHTO accredited and will be located within or near the supplier's facility.

If a company owns more than one supplier (i.e., refinery, terminal, etc.); the company shall have at least one laboratory that is AASHTO accredited. Only in this instance will a supplier be allowed to designate a primary laboratory that is not AASHTO accredited.

The company's AASHTO accredited laboratory shall review the facilities, testers, equipment and quality control plans of the company's other testing facilities annually. A copy of the review shall be included in the supplier's QC Plan and, after initial submittal of the QC Plan, shall be made available to Caltrans on request.

- b. *Satellite Laboratory* – A satellite laboratory may provide limited testing for the supplier when the supplier's primary laboratory is insufficiently staffed or not equipped to provide all testing.

The satellite laboratory shall be either AASHTO accredited or reviewed by the company's AASHTO accredited laboratory annually. The satellite laboratory shall be equipped to conduct all tests required to be performed. A copy of the review report shall be included in the supplier's QC Plan and, after initial submittal of the QC Plan, shall be made available to Caltrans on request.

- c. *Back-up Laboratory* – A back-up laboratory will provide testing for the

supplier when the supplier's primary or satellite laboratory is unable to perform testing. The back-up laboratory shall be designated in the supplier's QC Plan, and the Department will be notified when this contingency plan is put into action.

The back-up laboratory shall be AASHTO accredited and equipped to conduct all tests required to be performed during the period of time that the services are required.

- d. *Dispute-Resolution Laboratory* – A dispute-resolution laboratory will provide testing to assist in resolving problems that cannot be resolved by the supplier and the Department's joint efforts. The dispute-resolution laboratory will be chosen by the Department from the list of approved laboratories agreed to by the suppliers and the Department. The list is maintained by the Department and is available at:

www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

The dispute-resolution laboratory shall be independent of any involvement with supplier or Department activities, shall be AASHTO accredited and shall be equipped to conduct all tests required.

Samples for dispute resolution shall be sent by the Department to the dispute resolution laboratory without identification of supplier.

3. Cost of inspection for AASHTO Accreditation and AMRL Sample Proficiency testing shall be borne by the source of the data.

G. REQUIREMENTS TO BE CERTIFIED AS AN APPROVED SUPPLIER OF ASPHALT

1. The supplier shall submit a written request to the Department for authorization to ship modified and/or unmodified asphalt under this Certification Program for Suppliers of Asphalt.
2. The supplier shall submit a written request to the Department for authorization to ship a grade of asphalt under this program.

The supplier shall indicate for each asphalt grade whether that particular asphalt is produced regularly, intermittently, or per project.

3. When a supplier has not been supplying a grade of asphalt to Caltrans projects continuously for more than 60 days, the following requirements shall apply for shipment using a certificate of compliance:

- a. The supplier shall have been certified as an approved supplier of either unmodified or modified asphalt (as applicable) for the past 12 months.
- b. The supplier shall have demonstrated conformance to the specifications for the grade of the asphalt with no more than two non-compliant specification compliance test results or ten non-compliant quality assurance test results in the last 12 months of production of the grade of asphalt being shipped.
- c. The supplier's testing program shall have demonstrated conformance to the requirements of this program with no more than two non-verified specification compliance tests for any test method in the past 12 months.
- d. Prior to shipping asphalt, the supplier shall sample and test the asphalt for compliance to the requirements of the specifications involved. The supplier shall test for specification compliance as follows:
 - For batch operations, the first batch shall be tested for specification compliance and the results and split sample submitted to and received by the Department within three days of sampling. Thereafter, the supplier shall sample and test to the frequency defined by the approved QC Plan and this program.
 - For continuous operation, at the time of the first shipment, the tank or downstream from the in-line blending operation shall be tested for specification compliance and the results and split sample submitted to and received by the Department

within three days of sampling. Thereafter, the supplier shall sample and test to the frequency defined by the approved QC Plan and this program.

4. Asphalt shall satisfy the requirements of the applicable specifications.
5. The supplier shall perform initial testing on split samples of each asphalt grade listed in the written request for certification. The Initial Testing data shall be submitted to the Department along with one split sample of the corresponding asphalt. Sampling shall be done in accordance with the procedure and requirements outlined in this program.

The supplier shall report the initial testing results on standard forms obtained from the Department's internet website at:

www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

The supplier shall submit a quality control plan for the Department's approval.

For suppliers having a relationship with Caltrans, based on evaluation of 2 years production for Caltrans projects prior to April 1, 2004; the requirement for Initial Testing may be waived based on a written request from the supplier and approval of the Department.

H. SUPPLIER QUALITY CONTROL PLAN

1. The quality control (QC) plan shall present complete information regarding the supplier's quality control program. At a minimum, the supplier's QC Plan shall identify the following:
 - a. Facility type (refinery, terminal in-line blending or HMA plant, etc);
 - b. Facility location;
 - c. Name(s), telephone number(s), and E-mail address(es) of the person(s) responsible for quality control at the facility;

- d. An e-mail address at which the supplier will receive notices and communications from the Department.
- e. Name, location and certification of all laboratories designated for performing testing and the tests they will be performing; and
- f. Name, location and certification of the back-up laboratory.

The QC Plan shall include a copy of the AASHTO accreditation for each laboratory to be used.

The supplier shall notify the Department of any changes in AASHTO status for any laboratories listed in the supplier's QC Plan.

For those companies that own multiple suppliers, the QC Plan for each supplier shall include the AASHTO accreditation for the reviewing lab plus the report of inspection for all other laboratories. After the initial submittal, the supplier shall make copies of the annual reports available to the Department upon request.

2. The supplier's QC Plan shall include a contingency plan for when a confirmed quality control or specification compliance test result indicates that the asphalt being shipped for use in Caltrans work is not in compliance with the specifications,

At a minimum, the supplier shall:

- a. Identify the asphalt in question;
 - b. Cease shipment until the asphalt complies with the specification;
 - c. Take corrective action;
 - d. When required, notify the Department; and
 - e. When necessary, work jointly with the Department to resolve problems.
4. The supplier's QC Plan shall describe methods and location for sampling for initial, quality control and specification compliance testing.

5. The supplier's QC Plan shall describe the tests and frequency of the tests that will be performed on each asphalt grade for initial, quality control and specification compliance testing.
6. The supplier's QC Plan shall include an outline of the procedure to be followed by the supplier for checking transport vehicles before loading.
7. The supplier's QC Plan shall describe the programs or systems implemented for maintaining testing, loading, and shipment records.
8. The supplier's QC Plan shall include statements that:
 - The supplier understands that pursuant to Government Code Section 14105, that any person, firm, corporation, partnership, or association found to willfully conceal, alter, misrepresent, or distort information pertaining to the quality of materials may be barred from bidding or working on a California Department of Transportation job for a period of one to three years.
 - The supplier will prepare monthly summary reports in standard format for all specification compliance testing performed and will submit them to the Department by the 15th of the month following testing.
9. The supplier shall notify the Department of any changes made to the QC Plan.

I. REQUIREMENTS FOR MAINTAINING APPROVED SUPPLIER STATUS

Suppliers who are shipping asphalt to be incorporated into Caltrans work based on the use of a certificate of compliance shall meet the following requirements:

1. The supplier shall be an approved supplier for the type and grade of asphalt being shipped.
2. The supplier shall have a satisfactory record of compliance with specifications and this

Certification Program for Suppliers of Asphalt.

3. The supplier shall follow the procedures described in the approved QC Plan.
4. The supplier shall perform quality control and specification compliance testing and shall provide test results and split samples as required by this program.
5. The supplier's specification compliance and dispute resolution test results shall be verified for both asphalt quality and testing reproducibility as required by this program.
6. The supplier shall allow the Department to inspect production, shipping, and laboratory facilities; to observe the supplier's quality control procedures; and to obtain samples for testing.
7. The supplier shall perform not less than one (1) specification compliance test per asphalt type or grade every week (or less, for shorter periods of production) while the asphalt is being produced or retained for shipment to Caltrans projects.

If suppliers are not on the approved supplier list, they may ship asphalt to Caltrans projects as specified in Section 92, "Asphalt," of the Standard Specifications and this *Certification Program for Suppliers of Asphalt*.

J. REQUIREMENTS FOR SUPPLIERS SUPPLYING ASPHALT WITHOUT A CERTIFICATE OF COMPLIANCE

Suppliers who are not on the list of approved suppliers for asphalt may ship asphalt for use on Caltrans projects under the following conditions:

1. The Engineer and METS shall be notified in writing by the supplier. The notification shall include:
 - a. Supplier Name
 - b. Type and grade of asphalt

- c. Facility type (refinery, terminal in-line blending or HMA plant, etc);
 - d. Facility location;
 - e. Name(s), telephone number(s), and E-mail address(es) of the person(s) responsible for quality control at the facility;
 - f. An e-mail address at which the supplier will receive notices and communications from the Department.
 - g. Name, location and certification of all laboratories designated for performing testing and the tests they will be performing.
2. The supplier shall provide the Engineer with specification compliance test results from an AASHTO accredited laboratory. Sampling shall be as outlined in this *Certification Program for Suppliers of Asphalt*.
3. Each shipment of asphalt shall be accompanied by test results certifying compliance with specification requirements for the grade being shipped.
4. Asphalt will be incorporated into the HMA for the project with the approval of the Engineer and if testing and verification conforms to the following:
 - a. Before asphalt will be considered for use in a Caltrans project, the supplier shall test for specification compliance as follows:
 - For batch operations, the initial batch shall be tested for specification compliance and the results and split sample shall be submitted to the Department for verification prior to incorporation in the project.
 - For continuous operation, the first 3 truckloads shall be sampled downstream from the in-line blending operation and shall be tested for specification compliance. The results and split sample shall be submitted to the Department for verification prior to incorporation in the project.
 - b. After specification compliance testing of the first batch or first 3 truckloads has

been verified and the Engineer has approved use of the asphalt in the project, the asphalt shall be sampled and tested as follows to insure quality control:

- For batch operations, each batch shall be tested for specification compliance or if no new batch is made, the contents of the shipping tank shall be tested for specification compliance daily.
- For continuous operation, every second truckload shall be sampled downstream from the in-line blending operation and shall be tested for specification compliance daily.

Test results shall be submitted to the Engineer within 24 hours of sampling for unmodified asphalt and within 48 hours of sampling for modified asphalt.

One split sample from the specification compliance testing and the supplier's test results shall be sent (by overnight delivery) to the Department for verification testing at the time of submission to the Engineer. Verification shall be in conformance with the requirements of this program.

In cases where the supplier's and the Department's test results meet the criteria for verification, but either the supplier's or the Department's result is out of specification, the asphalt will be considered in specification compliance if the average of the supplier's and the Department's test results is in specification compliance. If the average of the test results is not in specification compliance, the supplier may request that the retained split sample be tested by the dispute resolution laboratory, and the average of the 3 test results compared to the specification requirements. If the average is within specification compliance, the asphalt will be considered in compliance and the cost of dispute resolution testing will be borne by the Department. If the average is not within specification compliance, the asphalt will be considered not in compliance, and the cost of dispute resolution testing will be borne by the supplier.

6. The Department's cost for verification testing will be borne by the contractor of the project involved. A fee schedule is posted on the Department's internet website at www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm.

K. SAMPLING REQUIREMENTS

1. All samples required by this *Certification Program for Suppliers of Asphalt* shall be obtained in accordance with AASHTO T-40, "Sampling Bituminous Materials," the supplier's production schedule and the supplier's quality control plan.
2. Split samples to be submitted by the supplier to the Department shall be obtained at the supplier's facility and split into three 1-liter cans. The supplier shall conduct applicable tests on one can and send one can along with the supplier's test results to the Department. The third can shall be saved by the supplier as a retain sample.

Split samples shall be obtained from the same point in the supplier's shipping process that the supplier's samples are taken (i.e., from storage tank at the refinery, from holding tank at terminal, or from line downstream from blending operation of an in-line blending process).

Retain samples shall be retained by the supplier until verification testing by the Department has been completed and the supplier's test results have been verified, until disputes have been resolved, or for 6 months from the date of submittal of the supplier's test results and sample to the Department.

3. Split samples of modified asphalt shall be canned in cylindrical shaped, 1-liter cans with an open top friction lid. Unmodified asphalt may be canned in either rectangular shaped, 1-liter cans with a screw-on lid or cylindrical shaped, 1-liter cans with an open top friction lid. *(Sample cans containing less material than required for testing will not be tested by the Department and the supplier will be notified of the inadequacy.)*

4. Split Samples shall be labeled with the following minimum information:
 - a. Supplier name and address;
 - b. Grade of asphalt;
 - c. Sample source (i.e. tank, blender, etc.);
 - d. Sample date and time; and
 - e. Sample purpose (initial testing, verification testing, problem resolution, etc.)

L. TESTING REQUIREMENTS

Testing shall be conducted according to the requirements of the specifications for the grade of asphalt and this *Certification Program for Suppliers of Asphalt*.

Asphalt properties shall be considered satisfactory if verified test results meet specification requirements for the grade of asphalt.

If the split sample data are not within the tolerance, an immediate investigation shall be conducted to determine the cause of the discrepancy.

Note: In specification compliance, quality assurance and verification testing actions are taken for "incidents". Action is taken only when responsibility for the incident is assignable to the supplier. The supplier shall perform the necessary investigations and provide documentation to the Department that the supplier is not responsible for the incident.

The Department is the final judge of responsibility.

1. *Initial Testing* shall be performed for each grade of asphalt. Split samples and test results shall be submitted to the Department to satisfy partial fulfillment of the supplier's application to be certified as an approved supplier. For each grade of asphalt to be supplied, initial testing to confirm specification compliance shall be performed for at least three consecutive lots.

A lot may be a fixed batch of asphalt or a specified quantity in a continuous operation. Lot size will depend on the production method used and quantity of the asphalt produced. Lot size and sample selection method shall be identified in the supplier's QC Plan or as a separate document with the letter of application.

- If a batch operation is used to manufacture the asphalt, a tank may be defined as a lot. A lot size would be the amount of asphalt batched into a tank (e.g. 100 tons).
- If a continuous process (in-line blending or shipment from "live" tanks) is used to manufacture asphalt, lot size may be chosen at random during the production.

During the application process and initial testing, the supplier's application for certification will not be processed until the cause of the unacceptable difference between the Department and supplier's results has been resolved and appropriate corrective actions have been taken.

For suppliers having a relationship with Caltrans, based on evaluation of 2 years production for Caltrans projects prior to April 1, 2004; the requirement for Initial Testing may be waived based on a written request from the supplier and approval of the Department.

2. *Quality Control Testing* shall be performed by the supplier. Quality control testing shall be conducted using tests and frequencies determined by the supplier, outlined in the QC Plan, and approved by the Department.

At least one specification compliance test shall be used for quality control. For modified asphalts the supplier shall use tests that monitor high and low temperature properties of the asphalt. Non-standard tests may be used for guiding the supplier, if approved by the Department. The use of non-standard tests

does not preclude the need to meet standard specifications or to run specification compliance tests.

Quality control test results shall be made available to the Department upon request.

3. *Specification Compliance Testing* shall be performed by the supplier on all asphalt types and grades being shipped to Caltrans projects using a certificate of compliance. Split samples of the specification compliance testing sample and test results shall be submitted to the Department monthly. Test results shall be submitted in a standard format available at:

www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

Specification compliance testing shall test all asphalt qualities required by the specifications for the type and grade of asphalt being tested.

Specification Compliance testing shall be conducted weekly for all asphalt qualities required by the specifications for the asphalt except:

- Solubility (AASHTO T44) shall be measured for each grade at least once every 6 months and/or when there is a change in formulation or source.
- Solubility (AASHTO T44) may be conducted using toluene as a substitute for trichloroethylene. In case of failing test results or disputed test results, trichloroethylene will be used for re-test.
- Ductility at 25° C (AASHTO T51) shall be measured for each grade at least once every 6 months and/or when there is a change in formulation or source.

Minimum specification compliance testing frequency shall be:

- a. For a tank that is filled prior to beginning shipping, and then emptied before more asphalt is added, perform one specification compliance test on the first day of shipment, one per tank when filled, and no

less than one per week throughout the period of shipment.

- b. For a tank being continually filled while continuous shipping is made from the tank, perform one specification test on the first day of shipment and one specification compliance test per week throughout the period of shipment.
- c. When blending directly into a tanker truck perform one specification compliance test on the first day of shipment and one specification compliance test per week throughout the period of shipment.

When the supplier's specification compliance testing has identified an asphalt that fails to meet the specification requirements and has been released into commerce, the following actions shall be taken:

- a. The supplier shall immediately cease shipment of the asphalt that is not in compliance, shall remove the non-compliant asphalt from the shipping queue, shall identify the shipment(s) containing non-compliant asphalt, and shall retrieve the non-compliant asphalt, if possible.
- b. The supplier shall immediately notify the Department, and shall advise the Department of product and shipment status.
- c. The supplier shall immediately sample and re-test the asphalt for which non-compliance has been identified.
- d. The supplier shall take corrective action to bring the asphalt into specification compliance and to prevent occurrences in the future
- e. The supplier shall provide the Department with documentation regarding the corrective action taken.
- f. Non-compliant specification compliance test results for asphalt released into commerce shall require the following actions:

- First incident of non-compliance in 12 months - The supplier shall suspend shipment of the grade of asphalt involved until the problem has been resolved. The supplier shall notify the Department of the action taken to resolve the problem before resuming shipment.
- Second incident of non-compliance in 12 months - The supplier shall suspend shipment of the grade of asphalt involved. The supplier shall notify the Department of the problem immediately.

The supplier shall notify the Department of the action taken to resolve the problem and will provide the Department with a split sample and the supplier's test results. The Department will verify the test results before shipment can be resumed.

- Third incident of non-compliance in 12 months - The supplier shall suspend shipment of the grade of asphalt involved. The supplier shall notify the Department of the problem immediately. If the problem is a quality problem brought about by the supplier's production process, the Department will revoke the supplier's status as an approved supplier for 12 months following the identification of the problem. The supplier may apply for Caltrans Approved Supplier status after the 12-month period.

In cases where the supplier's and the Department's test results meet the criteria for verification, but the Department's verification test result is out of specification and the supplier's specification compliance test result is in specification, the asphalt will be considered in specification.

Failure to provide testing as provided for in this program will result in revocation of the supplier's certification as an approved supplier.

4. *Quality Assurance Testing* will be performed by the Department to ensure that asphalt incorporated into Caltrans work conforms with specification requirements. Quality assurance testing will be performed using tests as specified for the asphalt being provided and at frequencies determined by the Department. Testing will be performed on samples obtained from in-line at the HMA production facility. Test results will be returned to the Engineer. Suppliers will be notified of non-compliant test results by METS.

When the Department's quality assurance testing has identified an asphalt that fails to meet the specification requirements, the following actions shall be taken:

- a. The supplier will be notified within 24 hours of testing.
- b. The supplier shall conduct an investigation with the HMA producer. Investigations may include, but are not limited to:
 - Gathering all available records
 - Additional testing and sampling
 - Inspection of storage tanks
 - Reviewing records, circumstances and events that may have contributed
- c. The supplier and the HMA producer will work together to identify the problem and to take action to resolve it.
- d. The supplier shall notify the Department of the problem and the action taken to resolve it.
- e. When a supplier has been identified as responsible for non-compliant asphalt of any type or grade from a single or multiple projects in a 12-month period, the following actions are required:
 - Up to five (5) incidents of non-compliance in three (3) months - The supplier and HMA producer shall work together to resolve the problem. The supplier shall notify the Department in writing of the action taken to resolve the problem.

- Up to ten (10) incidents of non-compliance in 12 months - The supplier shall suspend shipment of the grade(s) of asphalt involved. The supplier, the HMA producer and the Department will work together to identify and resolve any problems that may be involved. The supplier shall notify the Department in writing of the action taken to resolve the problem before the Department will approve resuming shipment.
 - Ten incidents of non-compliance in 12 months - The supplier shall suspend shipment of the type(s) and grade(s) of asphalt involved. If the problem is a quality problem brought about by the supplier's production process, the Department will revoke the supplier's status as an approved supplier for 12 months following the identification of the problem. The supplier may apply for Caltrans Approved Supplier status after the 12-month period.
5. *Verification Testing* will be performed by the Department on split samples received from the supplier. Verification testing will be performed using the specification requirements for the grade of asphalt being tested. Verification testing will be performed to assure compliance with specifications and to compare the supplier's test results to the Department's test results to determine if they are reproducible.

The variation used in verification considerations is based on the mean and standard deviation used to calculate the coefficient of variance (1S%) and based on proficiency test data collected by AMRL for the prior year. Data in Table 1 will be re-evaluated annually.

The supplier's tests will be deemed verified and the supplier's testing program will be deemed adequate if the difference between the test results for the supplier and the Department is within reproducibility parameters as defined by:

$$(X_S - X_D) \leq R_{CT}$$

where:

$$R_{CT} = \frac{D2S\%}{100} \times \frac{X_S + X_D}{2}$$

$(X_S - X_D)$ = Difference between supplier and Caltrans results

Note: D2S% for each quality is in Table 1.

When the supplier's specification compliance test results and the Department's verification test results are in compliance with specifications, but the test results can not be verified, for any asphalt grade or asphalt quality, the following actions are required:

- a. The Department will notify the supplier of the non-verification within 24 hours of identifying the inconsistency.
- b. The supplier and Department will work together to resolve the problem. Both the Department and the supplier will make resolution of the problem a highest priority.
- c. When a supplier's testing program has been identified as responsible for non-verification of test results for any asphalt grade in a 12-month period, the following actions are required:
 - First and second incident of non-verification in 12 months – When non-verification identifies a problem in the supplier's testing program, the supplier shall immediately review the testing protocols, equipment and practices and shall sample and re-test the grade of asphalt for which a testing inconsistency has been identified. A split sample and the supplier's test results of this asphalt

shall be sent to the Department for verification. If this review and re-test does not resolve the problem, then the supplier shall use the back-up laboratory to test the types and grades of asphalt which require the problematic test. When the problem has been resolved and the supplier has demonstrated that the supplier's testing program is verifiable, the supplier's laboratory may be used for testing.

The supplier shall notify the Department in writing as to the nature of the problem and the actions taken to correct the situation. The Department will approve the use of the supplier's laboratory after verification of the supplier's lab's test results.

- Third incident of non-verification in 12 months – When non-verification identifies a problem in the supplier's testing program, the supplier shall use the back-up laboratory to test the types and grades of asphalt which require the problematic test until the problem has been resolved and the supplier has demonstrated that the supplier's testing program is verifiable.

The supplier shall notify the Department in writing as to the nature of the problem and the actions taken to correct the situation. The Department will approve the use of the supplier's laboratory after 3 sets of specification compliance tests performed by the supplier's laboratory have been verified.

- Fourth incident of non-verification in 12 months – When non-verification identifies a problem in the supplier's testing program, the supplier shall use the back-up laboratory to test for the types and grades of asphalt that require the problematic test for a 3-

month period or at least 10 specification compliance tests.

The supplier shall notify the Department in writing as to the nature of the problem and the actions taken to correct the situation. The Department will approve the use of the supplier's laboratory when ten (10) specification compliance tests performed by the supplier's laboratory have been verified.

If, however, either the supplier's specification compliance test result(s) or the Department's verification test result(s) are not in compliance with specifications and the test result(s) can not be verified, for any asphalt grade or asphalt quality, the back-up laboratory will test the retained sample that produced the problematic test result. If the test result from the back-up laboratory is not in compliance, action will be taken as an incident of non-compliance.

6. *Reduction in Testing Frequency* – The Department may require greater or lesser frequency of testing, based upon the specific needs of the supplier's operation and upon the supplier's record of quality with the Department.

A supplier may reduce the specification compliance testing intervals to one (1) test per two (2) week interval if the specification compliance tests reported for eight (8) consecutive verified specification tests demonstrate consistent quality standards by falling within 1.5 times the standard deviation of the average of the supplier's last eight (8) specification compliance test results.

If a supplier is testing at reduced intervals, and suspends production of a type or grade of asphalt for more than 30 days; at the return to production, specification compliance testing shall be increased to one (1) specification compliance test per week until conditions of this *Certification Program for Suppliers of Asphalt* which allow reduction of specification compliance testing have been met.

If a supplier is testing at reduced intervals, and is found to either be out of conformance with specification requirements for the grade of asphalt or a problem with the supplier's testing program has been identified; the supplier's specification compliance testing shall be increased to one (1) per week until conditions of this program which allow reduction of specification compliance testing have been met.

M. REPORTING

1. At a minimum of once every month, the supplier shall provide split samples of the specification compliance test sample and corresponding test results.
2. By the 15th of every month, the supplier shall submit a monthly summary of all specification compliance testing performed during the previous month.
3. Test results will be submitted in a standard format available at:
www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm
4. All test data will be submitted electronically to: Caltrans Binder COC@dot.ca.gov.
5. Failure to report testing in a timely manner will result in revocation of the supplier's certification as an approved supplier.

N. DISPUTE RESOLUTION

The supplier and the Department will make dispute resolution their highest priority. When the supplier and the Department are unable to resolve testing discrepancies, then the services of a dispute resolution laboratory may be initiated by a request from the supplier, the contractor, the resident engineer or METS.

In the case where the supplier's test results are disputed, the AASHTO status and the AMRL Sample Proficiency testing reports and corrective actions taken for low ratings for the past two years for the laboratory(s) involved in the disputed testing shall be submitted by the supplier.

The dispute resolution laboratory shall test the retained third split sample as needed. Additional samples may be obtained and tested by all parties.

Cost of the dispute resolution laboratory's services will be borne by the supplier should the dispute resolution laboratory identify a problem with the supplier's asphalt or testing. Cost of the dispute resolution laboratory's services will be borne by the Department should the third party identify a problem with the Department's testing.

The supplier may appeal to the Chief of the Division of Construction if the outcome of an investigation is still disputed.

O. REQUIREMENTS FOR SHIPPING ASPHALT BINDERS BY AN APPROVED SUPPLIER

1. Each shipment of asphalt shall be accompanied by the original and one (1) copy of Certificate of Compliances which shall include the following:
 - a. Name and location of the supplier;
 - b. Grade of the asphalt;
 - c. The date and time of shipment;
 - d. A statement confirming that the transport vehicle was checked before loading and was found acceptable for the asphalt shipped, and
 - e. The Certificate of Compliance shall include the following wording:

" (Supplier name) hereby certifies that the asphalt product accompanying this certification was produced in accordance with the California Department of Transportation's Certification Program for Suppliers of Asphalt, and that this product complies in all respects with the requirements of the applicable specifications for the asphalt product identified on this document.

I hereby certify by my signature that I have the authority to represent the supplier providing the accompanying asphalt product."

The Certificate of Compliance shall be signed by a person having authority to bind the supplier.

Each of the items specified above shall be completed prior to signing. No certificate will be accepted that has been altered, added to or changed after the authorized signature has been affixed. Notations of a clarifying nature, such as project number, or contractor are acceptable, provided the requirements of the certificate are not affected.

A reproducible copy of a Certificate of Compliance is posted on the Department website at:
www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

2. The supplier's loading and shipping log shall contain the following information:
 - a. Asphalt grade and quantity;
 - b. Purchaser;
 - c. Contract or project number (if known);
 - d. Date and time of transportation vehicle inspection and shipment;
 - e. Number of Bill of Lading issued; and
 - f. Supplier's shipping source (i.e. tank, blender, truck, etc.).

P. REVOKING CALTRANS APPROVED SUPPLIER CERTIFICATION

If the Department deems the supplier has not satisfactorily met the requirements of this *Certification Program for Suppliers of Asphalt*, the Department will notify the supplier in writing of the revocation of their certification. This notice will document the specific reason(s) for revocation. The Districts and the Construction Program will be notified of this action, and a notice will be posted on the Department website at :

www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm

For 12 months following revocation, the supplier will no longer be allowed to ship asphalt of the type or grade stated in the revocation notice to Caltrans projects using a certificate of compliance.

The supplier shall have certification as an approved supplier revoked for no less than

12 months from the notification date. After the 12-month period, the supplier may apply for Caltrans Approved Supplier status as outlined in this *Certification Program for Suppliers of Asphalt*.

Q. REQUIREMENTS OF THE DEPARTMENT

The Department is responsible for the implementation and maintenance of this *Certification Program for Suppliers of Asphalt*. In fulfilling this responsibility the Department will:

1. Review and approve or reject the supplier's application for certification.
2. Notify the supplier whether or not the supplier's application for certification has been granted.
 - a. If certification has been granted, a listing of the asphalt types and grades covered under the certification will be included. The supplier will be listed on the Department's list of approved suppliers. The list is available on the Department's internet website at.
www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm
 - b. If certification has been denied, an explanation of any deficiencies found will be provided.
3. Maintain an AASHTO accredited laboratory for conducting quality assurance, verification and problem resolution testing.
4. Verify that the supplier's testing meets the requirements of this program. These verification tests will be used to verify both asphalt quality and the accuracy of the supplier's testing program.
5. Obtain and test samples as it deems necessary. The Department will provide test results to the supplier.
6. Perform quality assurance sampling and testing.
7. Notify the supplier of test results. When the supplier's test results differ from the Department's by more than provided for by

this program, the Department will notify the supplier of the discrepancy. Notification will be by e-mail.

8. Review the supplier's monthly testing summaries and maintain a record of the supplier's performance with regards to compliance with this program and specifications.
9. Post and maintain the Caltrans Approved Supplier List. The Caltrans Approved Supplier List will include the supplier's name, address and the asphalt types and grades for which the supplier is approved to provide a certificate of compliance. The list is available on the Department's internet website at:
www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm
10. Conduct a joint investigation with the supplier when necessary.
11. Revoke certification of an approved supplier, when required. When a supplier has had certification as an approved supplier revoked, the supplier's name will be removed from the Department's list of approved suppliers available on the Department's internet website at:
www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm
12. Request copies of supplier's loading and shipping logs as deemed necessary.
13. Visit the supplier's facility and shipping site when deemed necessary.

Table 1: Standard Deviation (1S%) and Allowable Range Between Test Results for Multi-Laboratory Testing (D2S%) ¹

AASHTO Designation	Test	1S% ²	D2S% ³
Tests on Original Asphalt			
T48	Flash Point [Cleveland Open Cup] (C)	4.520	12.784
T49	Penetration [@ 25° C] (dmm)	6.087	17.217
T201	Kinematic Viscosity [@ 135° C] (cSt)	4.050	11.455
T202	Absolute Viscosity [@ 60° C] (poise)	4.649	13.149
T316	Rotational Viscosity [@ 135° C] (Pa*s)	6.116	17.297
T228	Specific Gravity [@ 25° C]	0.218	0.616
T44	Solubility	4.155	11.752
Tests on RTFO Asphalt			
T240	RTFO - Change in Mass (%)	27.695	78.334
T49	Penetration [@ 25° C] (dmm)	6.087	17.217
T201	Kinematic Viscosity [@ 135° C] (cSt)	5.516	15.602
T202	Absolute Viscosity [@ 60° C] (poise)	10.928	30.908
T51	Ductility (cm)	20.000 ⁴	56.569 ⁴
T301	Elastic Recovery (%)	NA ⁵	NA ⁵
T315	G* [25 mm PP] (kPa)	8.649	24.463
T315	Phase Angle, (degrees)	1.163	3.290
T315	G*/sin (D) (kPa)	8.998	25.450
Tests on PAV Asphalt			
T315	G* [8 mm PP] (kPa)	16.934	47.895
T315	Phase Angle, D (degrees)	2.933	8.297
Note 6	SSV	15.455	43.713
Note 6	SSD	16.934	47.895
T313	Creep Stiffness, S (MPa)	2.933	8.297
T313	Slope, m-value	8.353	23.626

Notes:

- The 1S% and D2S% values listed above for each test have been computed using the means and standard deviations of the test reference sample data collected by AMRL for the year 2002.
- 1S% is coefficient of variance ($C_v = \text{standard deviation}/\text{mean} \times 100\%$) which normalizes the spread of the data.
where: 1S% = Allowable range between two test results obtained by the same operator, same equipment under same controlled conditions.
- $D2S\% = 1S\% \times 2 \times \sqrt{2}$
where: D2S% = Allowable range between two test results for multi-laboratory testing of a split sample.
- Extrapolated from precision statement of ASTM D 113-99 at specification requirements
- No data available.
- CTM 381, Part1